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THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT : Yves Ramanzin DOCKET NO.: PHFR010138
SERIAL NO. : 09/989,248 EXAMINER: Tung Vo
FILED : November 20, 2001 ART UNIT : 2621
FOR : VIDEO DECODING METHOD AND CORRESPONDING
DECODER

RESPONSE TO NOTICE OF NON-COMPLIANT APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In Response to the "Notice of Non-Compliant Appeal Brief" dated July 13, 2007, Applicants enclose Appeal Brief originally submitted on September 22, 2006 with corrections deemed to be non-compliant.

No additional fees are believed to be necessitated by the foregoing amendment. However, should this be erroneous, authorization is hereby given to charge Deposit Account No. 502-470 for any underpayment, or credit any overages.

Respectfully submitted,
NXP Semiconductors

Date: July 30, 2007

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(Name of Registered Rep.)

(Signature and Date)



APPEAL
Serial No.:09/989,248

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application

Inventor : **Yves Ramanzin**
Application No. : **09/989,248**
Filed : **November 20, 2001**
For : **VIDEO DECODING METHOD AND CORRESPONDING
DECODER**

APPEAL BRIEF

On Appeal from Group Art Unit 2613

**Respectfully submitted,
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I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the present application, NXP, Inc., and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-4 have been presented for examination. All of these claims are pending, stand finally rejected, and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

In response to the patent application filed November 20, 2001 containing claims 1-4, and assigned US Patent Application Serial No. 09/989,248, a first Office Action was mailed on October 19, 2004. Claims 1-4 were rejected under 35 USC §102(e) as being unpatentable under 35 USC §103(a) as being unpatentable over Wu (USP no. 6,700,933) in view of Han. On January 19, 2005 a response to the first Office Action was timely filed which presented arguments why the references cited failed render obvious the invention claimed. No amendments were made to the claims.

On June 10, 2005, a second and Final Office Action was entered which rejected claims 1-4 for the same reason as stated in the previous Office Action.

On July 25, 2005, a response to the second and Final Office action was timely filed that presented additional arguments as to why the claimed invention was not rendered obvious by the recited references. No amendments were made to the claims.

An Advisory Action was entered on August 9, 2005, which stated that reconsideration had been given to the arguments presented in the response filed on July 25, 2005 (and received on July 27, 2005) but they did not place the application in condition for allowance. The finality of the rejection was reasserted and further stated that "Wu teaches in Figure 20 and column 21, lines 41-56 that the base layer is replaced by an enhancement layer. This enhanced layer is shown to be clipped by the clipping module at the output. The claim language does not recite that the errors in the base layer are corrected using the information in the enhancement layer frame. The replacement of base layers is further taught by Han on page 293, column 1, paragraph 2. Han continues to teach throughout the article the importance to evaluate the errors in the base layers of multiple layered coding (page 298). Also pages 290-294 continue to clearly show actions being taken on and replacing a poor quality base layer frame with an additional frame. The additional frames are the different enhancement layers."

A Notice of Appeal, with appropriate fee, was filed on August 24, 2005. This Appeal Brief is being filed within two (2) months after the filing of the Notice of Appeal.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention, as represented by independent claims 1 and 4 teaches a method and system, respectively, for decoding a video sequence that has been encoded according to the principles of the MPEG-4 encoding standard (see page 4, lines 11-19). In

accordance with the principles of the MPEG-4 format, the video signal is encoded into a base layer and an enhancement layer. The enhancement layer is a residual signal that represents the image information missing in the base layer and may therefore be added to the base layer bitstream (see page 4, lines 24-32). With regard to claim 1, this claim recites a method for decoding a video bitstream including a base layer and an enhancement layer (see page 3, lines 2-4) comprising: decoding the base layer frames and the enhancement layer frames (see page 4, line 33-page 5, line 3) and displaying the decoded base layer frames either alone or with the decoded enhancement layer frames (see page 5, lines 2-3). Upon reception at a decoder, large differences in the quality between the displayed images coming from the base layer and from the enhancement layer may be observed because of the available bandwidth associated with each layer. (see page 5, lines 4-7). In displaying the decoded base frames, the frames in the base layer may have significantly lower quality compared with the average quality of the sequence (see page 5, lines 7-9), and such base layer frames are not displayed (see page 5, lines 9-10). The not-displayed base layer frames are replaced by frames from the enhancement layer (see page 5, lines 10-11). The replacement frames may, for example, be frames interpolated from preceding and following frames of the enhancement layer. (see page 5, lines 11-15).

Claim 4 recites a decoder (see page 4, lines 19-23, Figure 1) for decoding a video signal including a base layer and an enhancement layer (see page 3, lines 2-4) comprising decoding means (Figure 1, item 15) for decoding the base layer and the enhancement layer (see page 4, line 33-page 5, line 3), displaying means (see Figure 1, item 16) for displaying the decoded base layer and/or enhancement layers (see page 5, lines 2-3)

wherein base layer frames having poor quality are replaced (see page 5, lines 9-11) by an interpolation of two enhancement layer frames preceding and following the poor quality base layer frame (see page 5, line 12-15).

Claims 2 and 3 depend from claim 1 and recite further aspects of the invention recited in claim 1.

VI. GROUND FOR REJECTION TO BE REVIEWED ON APPEAL

The issue before this Board is whether:

1. Claims 1-4 are unpatentable over Wu in view of Han.

VII. ARGUMENT

I. Rejection of Claims 1 - 4 Under 35 USC §103(a) Over the Combination of Wu and Williams

Difference Between the Claimed Invention and the Cited References

The present application describes a system that provides for the improvement in the display of images transmitted in a fine-granularity layered coding scheme by monitoring the quality of the base layer portion of the images and replacing the base layer portions of the images with the enhancement layer portion of the images, when the quality of the base layers falls below a selected criterion. The base layer portion of the images is replaced by at least one of the preceding and following frames of the enhancement layer.

Wu teaches a video encoding scheme that employs fine-granularity layered coding including a base layer of low quality video and multiple enhancement layers of increasingly higher quality video. The video encoding scheme eliminates fluctuations in

the video by predicting higher quality data from the lower quality data encoded in the base layer and a low quality enhancement layer.

Wu teaches “[a] combined VLD and bit plane decoder module decodes the bit stream carrying the lower quality DCT residues. The recovered DCT coefficients are summed via summation 642 with the dequantized LQPD coefficients from the base layer decoder 602 to reproduce the encoded DCT coefficients. The ECD coefficients are passed to an IDCT transformer to reconstruct the enhancement layer.” (emphasis added). Hence, Wu teaches using the base layer to reconstruct the enhancement layer and fails to teach or suggest using the enhancement layer to replace the base layer as is recited in the claims.

Han, teaches the performance of systems with different combinations of errors in a multi-resolution layered encoded video signals. The section referred to in Han describe the effect of errors in one or more layers on the display. For example, page 289, 1st col. 4th para. states “[f]irst, note that the definition of MLC, complete loss of the last layer is secondary or can even be insignificant or unnoticeable. This is illustrated in Figure 2. ... Any errors or packet loss occurring in layer four data can be masked by displaying the decoded image including only layers one to three. The result is a lower resolution, but otherwise perfect.” (emphasis added).”

Han makes no suggestion of “replacing each poor quality base layer frame by at least one of the two frames of the enhancement layer,” as is recited in the claims. Rather, Han teaches either no displaying higher layers that contain errors or correcting errors in blocks by copying from corresponding blocks in the previous frame – i.e., errors in a base layer are corrected by coping from a corresponding base layer of a previous frame and

errors in an enhancement layer are corrected by coping from a corresponding layer in a previous frame.

**No Motivation Exists for the
Proposed Modification**

The law is clear that there must be some teaching in the references to support their use in the particular claimed combination. See *Smithkline Diagnostics, Inc., v. Helena Labs Corp.*, 859 F.2d 878, 887, 8 USPQ 2d 1468, 1475 (Fed. Cir. (1988)). The U.S. Supreme Court, recently, has held that the teaching, suggestion and motivation test (TSM) must be flexibly applied and that the knowledge of one skilled in the art is to be further considered. See *KSR International Co., v. Teleflex, Inc.* (citation omitted) (2007)

Neither Wu nor Han disclose replacing poor quality base layers with enhancement layers, as is recited in the claims.

With reference to the statements made in the Advisory Action with regard to Wu teaching that the base layer is replaced by an enhancement layer, applicant submits that Wu teaches quite the opposite. (see col. 21, lines 41-55, which state, "[a] combined VLD and bit plane decoder module decodes the bit stream carrying the lower quality DCT residues. The recovered DCT coefficients are summed via summation with the dequantized LQPD coefficients from the base layer decoder to reproduce the encoded DCT (ECD) coefficients. The ECD coefficients are passed to an IDCT transformer to reconstruct the enhancement layer. The reconstructed enhancement layer is summed via summation with either a predicted base layer ... or a predicted enhancement layer...")

Contrary to the statements made in the Advisory Action, Wu fails to teach replacement of the base layer by an enhancement layer and no reason has been shown in the Wu reference that would provide motivation to incorporate such a replacement step.

In fact Wu teaches away from such a replacement step, which the Court has found to be a factor in determining what would be known by those skilled in the art.

Applicant submits that Wu provides no motivation to incorporate the teachings of Han to replace a base layer with an enhancement layer as is recited in the claims and that Wu teaches away from performing this replacement step.

In view of the above remarks, applicant submits that the independent claims 1 and 4 are patentable over the teachings of the cited references.

With regard to the remaining claims, these claims depend from the independent claim 1 and are also not rendered obvious by the combination of Wu and Han by virtue of their dependency upon an allowable base claims.

**The Proposed Modification of Chen
Fails to Arrive at the Present Invention**

To establish a prima facie case of obviousness of a claimed invention, all the claim limitations must be taught or suggested in the prior art. See *In re Royka*, 490 F. 2d 981, 180 USPQ 580 (CCPA 1975).

The proposed modification of Wu fails to establish a prima facie case of obviousness because, even if there were some motivation to incorporate the teaching of Han, all of the claim elements are not taught or suggested by the combination of the cited references. Rather, the proposed modification fails to replace of the base layer by enhancement layers as both Wu and Han are silent with regard to this claim element. As shown, Wu teaches reconstructing the enhancement layer from the base layer and Han teaches the removal of enhancement layers when errors are detected in the enhancement layer.

The combination of Wu and Han cannot be said to render obvious the invention recited in the independent claims as both references fail to recite or suggest an element recited in the independent claims.

In view of the above remarks, applicant submits that the independent claims 1 and 4 are patentable over the teachings of the cited references.

With regard to the remaining claims, these claims depend from the independent claims and are not rendered obvious by the combination of the cited references by virtue of their dependency upon an allowable base claims.

**The Proposed Modification Cannot
Change the Principle of Operation of a Reference**

"If the proposed modification or combination of the prior art would change the principles of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." MPEP 2143.01 p. 2100-132, Rev. 2, May 2004 (quoting *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)).

As shown, Wu teaches reconstruction of an enhancement layer from a base layer. Hence, performing a replacement of the base layer with an enhancement layer would represent a fundamental change to the principles of operation of the Wu reference.

For at least the above reasons, the prior art references cited fails to render obvious the present invention as recited in the independent claims.

With regard to the remaining claims, these claims depend from the independent claims and, accordingly, are also not rendered obvious by the prior art references cited by virtue of their dependency upon an allowable base claims.

With regard to the remaining claims, these claims depend from the independent claims and, accordingly, are also not rendered obvious by the prior art references cited by virtue of their dependency upon an allowable base claims.

VIII. CONCLUSION

In view of the law and facts stated herein, it is respectfully submitted that the teachings of the cited references fail to render obvious the claimed invention and the burden of showing that the combination of the cited references teaches or suggests all of the features, expressly or inherently, recited in the claims has not been met. Applicant respectfully requests this honorable Board reverse the rejection of the claims.

Respectfully submitted,

NXP Semiconductors



Date: July 30, 2007

By: Steve Cha
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IX. CLAIMS APPENDIX

The claims which are the subject of this appeal are as follows:

1. For use in a video decoder comprising processing circuitry capable of receiving from a transmitting and/or storing medium a video bitstream which itself includes base layer coded video signals and enhancement layer coded video signals and decoding said bitstream for generating decoded signals corresponding either only to the base layer signals, to be then displayed alone, or to the base layer signals and the enhancement layer signals, to be then displayed together, a method of decoding said video bitstream including said base layer and enhancement layer coded video signals, comprising the steps of:
 - decoding the base layer coded video signals to produce decoded base layer frames;
 - decoding the enhancement layer coded video signals to produce decoded enhancement layer frames;
 - displaying the decoded base layer frames either alone or with the decoded enhancement layer frames to form video frames;said method being characterized in that the displaying step itself comprises:
 - a decision sub-step, for examining on the basis of a given criterion the quality of each successive base layer frame to be displayed and selecting the poor quality frames;

- a replacement sub-step, for replacing each poor quality base layer frame by at least one of the two frames of the enhancement layer preceding and following said poor quality frame base layer frame.

2. A decoding method according to claim 1, in which each poor quality base layer frame is replaced by the temporally closest of said preceding and following frames of the enhancement layer.

3. A decoding method according to claim 1, in which said poor quality base layer frame is replaced by a frame obtained by means of an interpolation between said preceding and following frames of the enhancement layer.

4. A video decoder for decoding a video bitstream including base layer coded video signals and enhancement layer coded video signals, wherein the enhancement layer includes enhancement frames arranged in a display order, said decoder comprising:

- first decoding means for producing decoded base layer frames ;
- second decoding means for producing decoded enhancement layer frames;
- displaying means for displaying said decoded base layer and enhancement layer frames and in which each poor quality frame of the base layer to be displayed is replaced by an frame obtained either by means of an interpolation between the two frames of the enhancement layer preceding and following said poor quality frame of the base layer or by only one of these two frames.

X. EVIDENCE APPENDIX

No supplemental evidence was provided by applicant that was entered into the record during the prosecution of this matter.

XI. RELATED PROCEEDING APPENDIX

No related proceedings are pending and, hence, no information regarding same is available.